## (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 22 June 2006 (22.06.2006)

(10) International Publication Number WO 2006/065533 A3

(51) International Patent Classification: C07K 16/00 (2006.01) A61K 39/395 (2006.01) C07K 16/28 (2006.01) G01N 33/53 (2006.01)

(21) International Application Number:

PCT/US2005/043257

(22) International Filing Date:

29 November 2005 (29.11.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/631,757 29 November 2004 (29.11.2004) US 60/673,146 19 April 2005 (19.04.2005)

(71) Applicant (for all designated States except US): SEAT-TLE GENETICS, INC. [US/US]; 21823 30th Drive, South East, Bothell, Washington 98021 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MCDONAGH, Charlotte [GB/US]; 8018 28th Avenue North West, Seattle, Washington 98117 (US). CARTER, Paul [US/US]; 4312 86th Avenue South East, Mercer Island, Washington 98040 (US).

(74) Agents: MIYAMOTO, Neil, G. et al.; TOWNSEND AND TOWNSEND AND CREW LLP, Two Embarcadero Center, 8th Floor, San Francisco, California 94111-3834 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## **Published:**

with international search report

(88) Date of publication of the international search report: 14 June 2007

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ENGINEERED ANTIBODIES AND IMMUNOCONJUGATES

(57) Abstract: Antibody drug conjugates with predetermined sites and stoichiometries of drug attachment are provided. Also provided are methods of using antibody drug conjugates.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/43257

A. CLASSIFICATION OF SUBJECT MATTER IPC: C07K 16/00( 2006.01),16/28( 2006.01);A61K 39/395( 2006.01);G01N 33/53( 2006.01)			
USPC: 530/391.3,391.7;424/178.1,179.1,181.1;435/7.1 According to International Patent Classification (IPC) or to both national classification and IPC			
B. FIELDS SEARCHED			
Minimum documentation searched (classification system followed by classification symbols) U.S.: 530/391.3,391.7; 424/178.1,179.1,181.1; 435/7.1			
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched			
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) MEDLINE, EMBASE, BIOSIS, SCISEARCH, CAPLUS on STN; WEST, PGPub			
C. DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where ap	opropriate, of the relevant passages	Relevant to claim No.
A	SUN M.M. Reduction-Alkylation Strategies for the Modification of Specific Monoclonal Antibody Disulfies Bioconjugate Chem, Vol 16, pages 1281-1290, see entire document, especially page 1285, col. 2, Figure 4.		
A	McDONAGH CF Engineered Antiobdy-drug Conjug Stoichiometries of Drug Attachment Protein Eng Des 299-307, see entire document, especially abstract.	gates with Defined Sites and s Sel July 2006 Vol 19, No. 7, pages	1-40
Further documents are listed in the continuation of Box C. See patent family annex.			
* Special categories of cited documents:  "A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier application or patent published on or after the international filing date or pridate and not in conflict with the application but cited to understate principle or theory underlying the invention  "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive the decrease of the principle or theory underlying the invention cannot be considered novel or cannot be considered to involve an inventive the decrease of the principle or theory underlying the invention cannot be considered to involve an inventive the decrease of the principle or theory underlying the invention cannot be considered to involve an inventive the decrease of the principle or theory underlying the invention cannot be considered to involve an inventive the principle or theory underlying the invention cannot be considered to involve an inventive the principle or theory underlying the invention cannot be considered to involve an inventive the principle or theory underlying the invention cannot be considered to involve an inventive the principle or theory underlying the invention cannot be considered to involve an inventive the principle or theory underlying the invention cannot be considered to involve an inventive the principle or theory underlying the invention cannot be considered to involve an inventive the principle or theory underlying the invention cannot be considered to the principle or theory underlying the invention cannot be considered to involve an inventive the principle or theory underlying the invention cannot be considered to involve an		tion but cited to understand the	
	which may throw doubts on priority claim(s) or which is cited to the publication date of another citation or other special reason (as	"Y" document of particular relevance; the cl considered to involve an inventive step combined with one or more other such	when the document is
"O" document	referring to an oral disclosure, use, exhibition or other means	being obvious to a person skilled in the	art
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family	
Date of the actual completion of the international search  Date of mailing of the international search reports and the int			n report
02 January 2007 (02.01.2007)			
Name and mailing address of the ISA/US  Mail Stop PCT, Attn: ISA/US  Commissioner for Patents  P.O. Box 1450  Alexandria, Virginia 22313-1450		Phuong Flyynh Telephone No. (571) 272-1600	
Facsimile No. (571) 273-3201			

Form PCT/ISA/210 (second sheet) (April 2005)